extension observed for other reflexes. (2) The localized vascular reflex is more direct than the radiated vascular reflex. (3) The influence of the cerebrum over the spinal centres is manifest in the matter of the vascular reflexes. (4) The time for the vessel reflex for sensitive stimuli is 3 seconds for the arm and 5 seconds for the leg. (5) The reflex for the cerebral vessels for sensory stimulation has a latency not less than the arm reflex for the same stimulus. (6) During sleep vessel reflex action is retarded, diminishing from the centre toward the periphery, and not appreciable in the lower leg. (7) During sleep the movements of the blood in the brain, following stimuli, are probably active and self-regulating reflexes. (8) In the limbs the vascular reflex for sensorial stimuli and for psychic stimuli requires about 4 seconds longer than reflexes for sensitive stimuli. (9) Each sense stimulated gives its own vascular reaction. (10) Some sensorial stimuli provoke vaso-motor reactions with greater force than others.

JELLIFFE.

PATHOLOGY.

197. AZIONE DELLA TOSSINA DIPTERICA SUL SISTEMA NERVOSA. CONTRIBUTO ALLA PATOGENESI DELLA PARALYSI DIPTERICA (Action of the Diphtheria Toxin on the Nervous System). Ezio Luisada e Dante Pacchioni, Torino (Giornale della R. Accademia di Medicina di Torino, 61, 1898, p. 77).

These investigations, under the direction of Prof. G. Neya, sought the vulnerability of the nervous tissues to the diphtheric toxines, and injected the toxic material in (1) the cerebral cortex, in the Rolandic area; (2) in the vertebral cavity, near the medulla, and (3) in the sheath of the sciatic nerve. The animal experimented upon was the dog, 13 being under observation, and the effects of the diphtheric toxines obtained from Dr. Belfonti, of the Serotherapeutic Institute of Milan, were studied from a clinical and anatomo-pathological point of view. The results obtained by these investigations may be summarized as follows: 1. The diphtheric toxines, applied directly to the nervous system, provoke a profound lesion at the point of application, characterized anatomically by an inflammation and a degeneration.

2. These lesions are propagated more or less extensively from the point of application.

3. In the dogs not previously immunised by the anti-diphtheric serum, and which had been injected by a dose sufficiently toxic, the phenomena of local reaction and also those of a general intoxication were noted.

4. In immunised dogs the diphtheric toxines provoked constantly alterations of the central nervous system, intense, localised, but of less extent than those produced in dogs non-immunised.

5. The toxine applied directly to the medulla is propagated rapidly in all directions, preferring the posterior columns, the gray matter and the central canal as routes. In consequence of the bulbar invasion death occurred in the animals more rapidly when the toxines were introduced into the medulla than when applied to any other portion of the cerebro-spinal axis. When the toxines were introduced in the cerebral cortex, characteristic lesions of these regions were manifested. Death occurred later, through propagation of the poison to the medulla.

6. Toxines introduced into the sheath of the sciatic nerve provoked an inflammatory process more or less intense, but more circumscribed than in the central nervous system. From the nerve the

toxines ascended to the medulla, chiefly through the posterior columns, and thus provoked an ascending myelitis.

7. The lesions produced upon the neuroglia by the direct application of the toxines are the same as described by Vassale, Donaggio and others in the various intoxications and infective processes. In the oblongata the prevalent alterations are found in the crossed pyramidal tracts and posterior columns.

8. The alterations produced by the toxines affect the nerve fibres more than any other part of the nervous tissue. These lesions affect principally the myelin, and consist in a physical modification of the same, whereby the connections between the various nerves are lost. There is partially a chemical modification of the myelin also present.

9. The local action of the toxines has much importance in the genesis of various paralyses as seen in the human family,attacking first the sheaths of the nerves, then the nerves, then later the nerve centres in the oblongata. KRAUSS.

198. BEITRAG ZUR PATHOLOGIE DER GANGLIENZELLE (Contribution to the Pathology of the Ganglion Cell). O. Juliusburger and E. Meyer (Monatsschrift für Psychiatrie und Neurologie, 3, 1898, p. 316).

These writers conclude, from their examination of a number of cases, that the changes which occur in the chromophilic elements of the ganglion cells are quantitative, vary, therefore, only in intensity, and do not differ in character in the various diseases. They cannot distinguish between the "reaction at distance" and the primary lesions of the cells. The structural cellular changes are simply the manifestations of altered cell vitality. According to their views, the chromophilic elements are capable of regeneration. SPILLER.

199. ZUR PATHOLOGIE DER HEMIPLEGIEN IM GEFOLGE DES KEUCHHUSTENS (Contribution to the Pathology of Hemiplegia Resulting from Pertussis). Hans Luce (Deutsche Zeitschrift für Nervenheilkunde, 12, 1898, p. 272).

A boy of five years became hemiplegic immediately following a convulsive attack in whooping cough. Death occurred after two days. A careful microscopical examination failed to reveal a sufficient cause for the hemiplegia. No hemorrhage within the nervous system was found. Clonic convulsions, especially marked on the paralyzed side, indicated that the paralysis must be of cortical origin, and similar to that occurring in Jacksonian epilepsy. Considerable importance is laid by the author on the accumulation of CO_2 in the repeated convulsive attacks. Luce believes that the hemiplegia occurring in pertussis is due to meningeal hemorrhage, or has no detectable anatomical lesions, and that hemorrhage within the inner capsule or elsewhere in the motor tracts has not been demonstrated as the cause of such hemiplegia. SPILLER.

200. LESIONS HISTOLOGIQUES DE LA CELLULE NERVEUSE DANS LE TÉTANOS ET L'IMMUNITÉ ANTI-TÉTANIQUE (Fine Histological Lesions of the Nervous Cellule in Tetanus and Anti-Tetanic Immunity). MM. Chantemesse et Marinesco (La. Med. Moderne, 9, 1898, p. 79).

The idea that the development of tetanus is due to a combination of the tetanic poison with the nervous cellule is not new. The authors have stated in a new fashion the confirmation of the theory